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ABSTRACT

This study examined the National Board for Professional Teaching Standards (NBPTS) certification process, investigating 65 white and African American teachers from North Carolina, Ohio, and the District of Columbia who had sought National Board certification in one of two areas--early adolescence/English language Arts and middle childhood/generalist. Of the 65 teachers, 31 achieved certification. Their certification scores fell into one of four groups: well above or below the performance standard or just slightly above or below the performance standard. Researchers observed the teachers, interviewed teachers and their students, administered student surveys, and collected students' written responses to a statement. All 65 teachers demonstrated laudable teaching skills, but National Board certified teachers outperformed non-certified teachers on all 13 generally recognized measures of good teaching. Differences were dramatic in 11 areas. Certified teachers were better at improvising when faced with the unexpected, understanding why students succeeded or failed on specific tasks, engaging students without overwhelming them, and anticipating difficulties students might have with new concepts. Students of certified teachers demonstrated a deeper understanding of the concepts they were taught than did students of non-certified teachers. (SM)

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A Distinction That Matters

Why National Teacher Certification Makes a Difference

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National Board for PROFESSIONAL TEACHING STANDARDS™

Highlights from a study of the National Board for Professional Teaching Standards certification process

the teachers

Measuring Excellence

What do National Board Certified Teachers have in common with Olympic athletes? Both represent an elite class. Through innate ability and dedication to their craft, and to their own improvement, Olympic athletes have distinguished themselves from a field that includes many other excellent competitors. The same is true for National Board Certified Teachers, who go the extra mile to help their students achieve at higher levels.

Like Olympic judges, the National Board for Professional Teaching Standards (NBPTS) recognizes experts. Teachers who earn the Board's national, advanced certification show they meet high standards in a rigorous evaluation that examines their knowledge of children and subject matter, and their ability to put that knowledge to use effectively.

But measuring accomplished teaching is complicated. Unlike a race that determines an undisputed winner, NBPTS certification requires the application of professional judgment. Candidates are judged by their peers on standards that leading educators and scholars have determined are essential to learning. This type of jury system has been used for decades in other fields, such as art and architecture, but it is not common to professionals in elementary and secondary education. NBPTS introduced national certification of these teachers less than 10 years ago, and because it was new and unfamiliar, some in the education community were skeptical. The Board sets the standards, the Board oversees the assessment. Is there really a measurable difference between teachers certified by NBPTS and others who did not meet its standards?

The answer is a clear yes, according to a bold new study of the National Board Certification process. NBPTS asked a team of researchers to take an unblinking look at the certification system to ensure it is doing what it claims to do—recognize highly accomplished professionals. No other profession with a national process for certification has subjected itself to such a review and made the results public. In the end, the study provides evidence to support what teachers and policymakers have said from the outset—National Board Certification is a distinction that matters.

The Study Group

The research team, led by Lloyd Bond of the University of North Carolina at Greensboro, looked at 65 teachers from North Carolina, Ohio, and the Washington, DC, metropolitan area. The sample group was recruited from a pool of eligible participants who met these criteria:

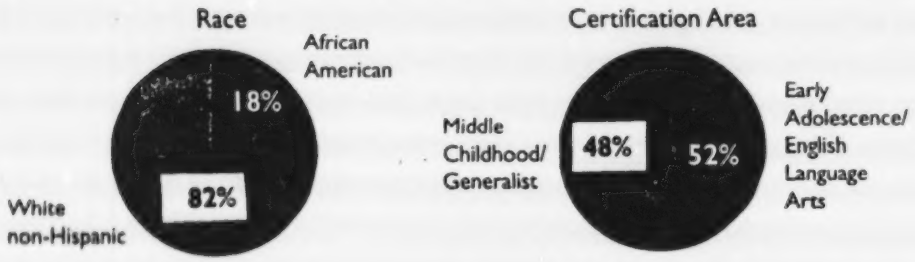
- They had sought National Board Certification in one of two areas – Early Adolescence (ages 11–15)/English Language Arts and Middle Childhood (ages 7–12)/Generalist. Why these areas? The researchers wanted to get a feel for whether the

effects they were looking for could be found across student age groups and teacher certificate categories. Thirty-one of the 65 teachers achieved certification, but that does not mean the team compared outstanding teachers to lower achievers. The non-certified teachers were highly competent professionals who in many cases had just missed the standard for certification.

- Their race/ethnicity was white (non-Hispanic) or African-American. Teachers of other ethnicities have not applied for certification in large enough numbers to be effectively studied.
- Their National Board Certification scores fell into one of four groups—well above the performance standard, well below the performance standard, and just slightly above and below the performance standard. It's important to note that although the directors of the research effort knew participants' certification status in order to recruit them for the study, the teams of teachers that observed and evaluated the study participants did not.

The Study Participants

Average Years' Teaching Experience: 15



NOTE: Researchers found no correlation between the two study groups and the socioeconomic status (SES) of their students.

Key Findings

- All 65 teachers in the study demonstrated laudable teaching skills, but the National Board Certified Teachers outperformed their non-certified counterparts on every one of 13 generally recognized measures of good teaching, and the differences were dramatic on 11 of them.
- For example, the National Board Certified Teachers were better at improvising when faced with the unexpected, understanding why students succeed and fail on a given academic task, engaging students without overwhelming them, and anticipating difficulties students might have with new concepts.
- Students of the National Board Certified Teachers demonstrated a deeper understanding of the concepts they were taught (in units the researchers had observed). Nearly three-quarters of the National Board Certified Teachers produced students whose work reflected deep understanding of the subject being studied compared with less than one-third of non-certified teachers. *See pages 10–11 for more details on the study results.*

the criteria

Attributes of Exemplary Teachers

The researchers began the study by analyzing the extensive body of published studies on expert teaching. From this review of the literature, they identified 13 key attributes that surfaced in study after study that characterizes expert teaching. The research team based its evaluation of the teachers in this study on the following 13 attributes of exemplary teaching:

Use of Knowledge—Displaying appropriately deep knowledge of a subject, constantly adding to that body of knowledge, and connecting new information with other topics in the curriculum to help students delve below surface understanding

Deep Representations—Drawing upon a vast array of materials, assignments and approaches to provide tailored instruction for students with varied backgrounds and abilities

Problem Solving—Defining and refining instructional and curriculum issues to reach insightful solutions

Improvisation—Adapting and modifying instruction during the flow of lessons as the situation dictates

Classroom Climate—Creating optimal environments for learning, in part by becoming acutely aware of how students are responding to instruction

Multidimensional Perception—Displaying a high level of awareness by reading verbal and nonverbal cues, filtering relevant information and identifying priorities for action

Sensitivity to Context—Appreciating the essential characteristics of students and classes and using them to guide decisions

Monitoring Learning and Providing Feedback—Keeping a careful watch on how well students are responding to lessons and assignments and offering constructive criticism of their progress

Test Hypotheses—Reflecting on how well ideas worked in practice and refining future lessons accordingly

Passion for Teaching and Learning—Expressing a high level of emotion over successes and failures and inspiring students to become more excited about learning

Respect for Students—Displaying not only a high regard for students' learning and well-being but also helping them find ways to overcome barriers to learning

Challenge—Articulating high expectations and formulating lessons and activities that are more demanding and engaging for all students

Deep Understanding—Attempting to provoke curiosity and developing inquiry and problem-solving abilities in students by thoroughly examining the intricacies of a problem or issue

It was necessary for the research team to evaluate each of these attributes individually within each teacher's practice to study and compare them effectively, but expert teaching really is more than the sum of these individual traits. These teachers know their subject and they know education, and they constantly draw upon that knowledge to understand where students are, where they need to go, what work to put in front of them, how they spend their time, who needs more and less attention, and how to address individuals and groups. In the end, accomplished teaching is the successful blend of all these attributes.

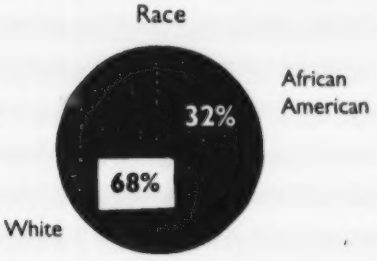
the method

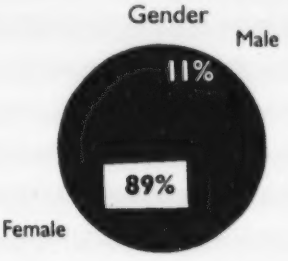
Collecting the Data

Once the criteria were set, the research team designed a sophisticated system that would allow teachers in the study to be evaluated fairly and objectively. It began with one team's systematic gathering of data that a different team would later assess.

The Observers

Who They Were: Twenty-eight educators, the majority of whom were classroom teachers with an average of 25 years' experience in a variety of subjects and grades. Many had received awards that recognized their teaching and other contributions to education.





Responsibilities: After three days of rigorous training, the observers were grouped in pairs and assigned teachers to visit. Their role was solely to collect information according to strict protocols, not make judgments. During the observation, they knew only the teacher's name, location, grade level, and subject matter. They were not told of the teacher's certification status and agreed not to seek it out.

What They Did: Observed the teachers in their classrooms to witness them teaching one lesson within the larger unit of instruction that they were focusing on for the study. As one observer watched the teacher to study how he or she explained the material and responded to students, both verbally and otherwise, the other completed a form designed to record classroom interactions. An observation protocol guided the team to ensure each one looked at the same attributes (directions and procedures, monitoring, feedback, management, adaptation, questioning) in the same way (by taking detailed notes and recording nonverbal cues).

After Class: The observers interviewed, separately, three students randomly selected by the researchers for 10 minutes each in a nearby classroom or other private area. The line of questioning was aimed at determining how well the students understood the day's lesson. The pair then interviewed the teacher for about an hour and left a packet containing questionnaires, and a writing exercise for the students, instructions for collecting additional student work samples, and an addressed, stamped packet for the return of those materials to the researchers.

The Casebook

➥ The researchers compiled a casebook of all the materials collected for each teacher. Each casebook contained:

- An explanation of the unit being studied
- Transcripts of the tape-recorded lessons and teacher and student interviews (with identifying information marked out)
- Copies of all unit-related work completed by four randomly selected students
- Completed writing exercises designed by the research team and assigned to students
- Completed student and teacher questionnaires

➥ To measure their motivation and independence, students were given two surveys crafted by the research team. Here are just a few sample questions from the first one, "About My Schoolwork and About My Class." Students were asked to mark whether they strongly disagreed, mostly disagreed, disagreed, agreed, or mostly agreed with statements such as these:

- An important reason I do my schoolwork is because I know we will get graded on it.
- I want to get right answers, even if I don't understand the work.
- I like schoolwork that I'll learn from even if I make a lot of mistakes.
- I like schoolwork best when it really makes me think.
- I can do almost all the work in class if I don't give up.
- No matter how hard I try, there is some class work I'll never understand.
- When problems arise in class, they are dealt with fairly.
- The teacher explains what will happen if someone breaks a rule.

➥ Teachers in the study also agreed to ask their students to spend 50 to 55 minutes writing a response to a statement. They were not given time to prepare. The writing samples were returned to the research team. Here is an example of a "prompt" given to students in grades 4 to 8.

EXAMPLE:
Grades 4 to 8 Writing Prompt

Imagine that your school is planning to require new school uniforms. All students would be required to wear tan pants, shorts, or skirts but could choose red, white, or blue shirts. Write a letter to your principal explaining why this is or is not a good idea.

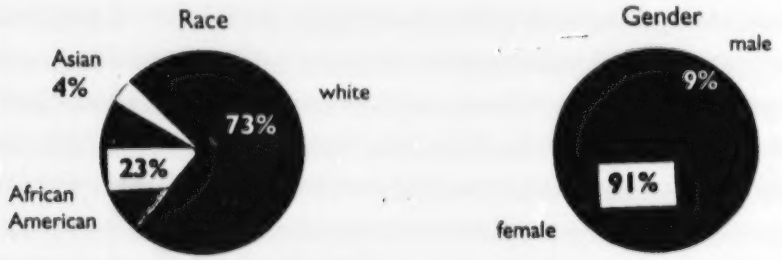
the analysis

Evaluating the Data

Completed casebooks went to a separate team of assessors, which reviewed them to find evidence of the 13 attributes of teaching expertise that were used to compare National Board Certified Teachers and non-National Board Certified Teachers.

The Assessors

Who They Were: Twenty-two National Board Certified Teachers from North Carolina and doctoral students in the field of curriculum and teaching. Team members averaged 17 years' teaching experience in a variety of subjects and grades, and more than half had advanced degrees in education.



What They Did: After rigorous training to guard against bias that can creep into peer evaluations, plus in-depth instruction on the individual attribute they would be scoring, the assessors began their work. They reviewed randomly assigned, numbered casebooks cleared of all identifying information about the teacher. Using a four-point scoring guide, or rubric, they focused on all evidence throughout the casebook that related to the particular attribute they were to evaluate. Each assessor assigned a score, from 1 to 4, that he or she thought best reflected the value of the evidence collected. (See sample rubric on facing page.) Scores were noted on a paper form and online.

How the Scoring System Worked: Each of the 13 attributes had its own scoring rubric, which consisted of a broad explanation of the attribute, and specific examples of behaviors and knowledge teachers would typically display at both the novice (1) and expert (4) levels. Scorers compared the rubrics with the evidence in the casebooks and rated each teacher accordingly. For example, the casebook of a teacher who scored a 4 on a particular attribute contained abundant, convincing and sustained evidence that showed she met the rubric's standard. The casebook of a teacher who scored a 1 contained scanty, or even negative, evidence of performance on that attribute. Each casebook was independently reviewed and scored by two assessors.

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Sample Rubric

Improvisation

Experts adapt and modify their instruction during the flow of lessons. While competent teachers may make adjustments to their plans over time, experts are more likely to assess the impact of their instruction on an ongoing basis and make changes on the spot. Experts draw upon an extensive repertoire of patterns of action while teaching, incorporating them into instruction that is continually responsive to students.

Level 4 **A teacher at this level:**	• Designs and implements opportunities for "on-the-spot" learning	• Makes immediate and instructionally effective decisions during the flow of lessons	• Responds readily and effectively to things that students say and do and adjusts plans accordingly
Level 3 **A teacher at this level:**	• Develops plans that allow for some flexibility as lesson progresses	• Makes some instructional-effective decisions during the flow of lessons	• Alters instruction based on general patterns of student response
Level 2 **A teacher at this level:**	• Develops plans that are specific and allow for little flexibility as lesson progresses	• Follows predetermined lesson sequences with little variation	• Alters instruction only when confronted with unexpected, major challenges to prespecified lesson plan
Level 1 **A teacher at this level:**	• Rarely, if ever, develops plans that allow for flexibility as lesson progresses	• Experiences confusion and frustration when students respond or events occur in unexpected ways	• Resists any alteration in instruction

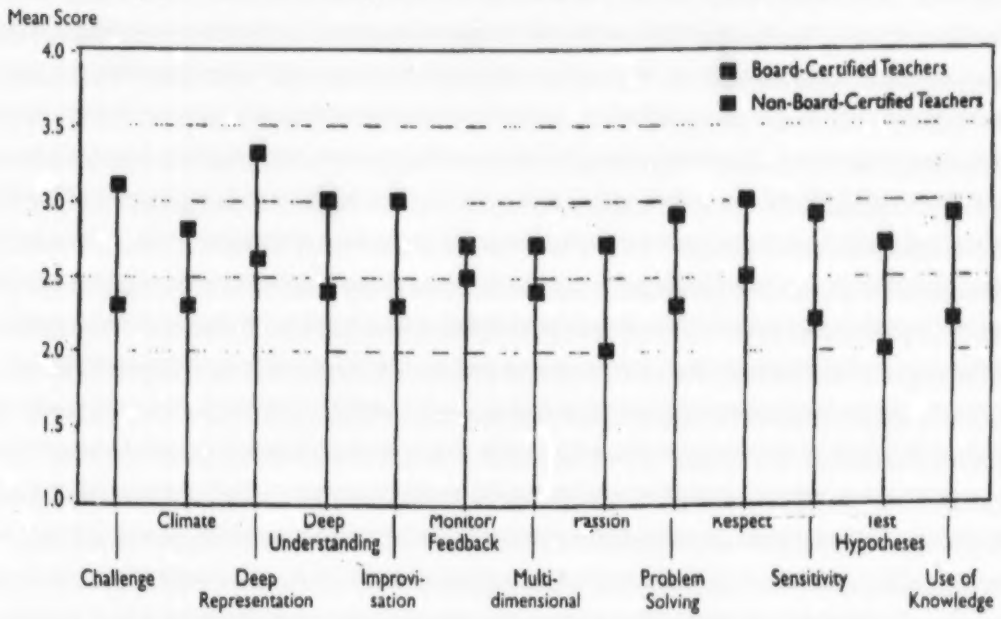
Determining Final Scores: When the assessors' scores disagreed, a lead assessor helped them resolve their differences in conference. At no time did the lead assessor attempt to sway either of the original assessors.

the results

Teaching Practice

Although the study's sample size was relatively small, it produced a vast amount of data that supports NBPTS's contention that it is, in fact, identifying expert teachers. The 31 National Board Certified Teachers in the study, as a group, consistently demonstrated a higher level of expertise on all 13 attributes measured in the study. While differences in average scores for two of the attributes—Multi-dimensional Perception and Monitoring Learning—were too small to be called statistically significant, the differences on the remaining 11 attributes were indeed impressive. Here's how the two groups compared:

Average Scores for Board-Certified and Non-Board-Certified Teachers



This evidence is all the more compelling because of the size of the study group. The smaller the sample for a study, the harder it is to find statistically significant differences among participants in a comparison such as this. For this reason the research team believes these results are especially strong.

Student Outcomes

The researchers didn't want the study to rest entirely on the comparison of teaching practice alone. Each attribute of accomplished teaching ultimately is tied to student outcomes. Although the connection between strong teaching and successful learning is notoriously

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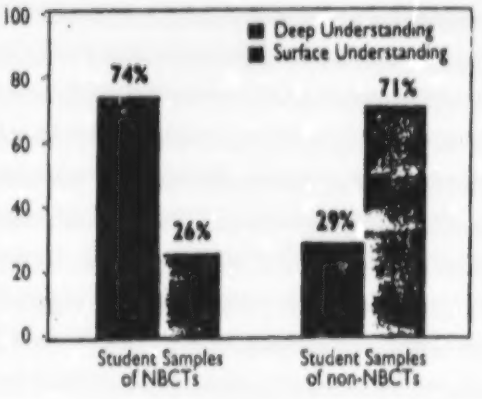
difficult to measure, the researchers did want to see whether the students of National Board Certified Teachers achieved at higher levels than students of the comparison group.

Students' Level of Understanding



To measure this, the researchers reviewed completed assignments of the four students they randomly chose from the roster of each teacher. Collecting the work proved especially challenging. Ten of the teachers did not produce samples despite repeated pleas from the researchers, and samples from nearly half the teachers were not usable. Still, the teams were able to cull comparable student work samples from 36 teachers (19 certified and 17 non-certified). Their two-stage analysis, completed with the well-established Structure-Of Learning Objectives (SOLO) rubric, found 74 percent of the Board-certified teachers produced students who demonstrated "deep understanding" of the unit they were taught compared with only 29 percent of non-Board-certified teachers. Reviewing work that ranged from completed worksheets to papers to "artifacts," such as completed presentations or products, the assessors looked for evidence of understanding according to SOLO's four levels:

- Unistructural—Students understand one aspect of the assignment
- Multistructural—Students understand more than one aspect of the assignment, but the facts are not interrelated
- Relational—Students understand several aspects of the assignment and tie them together
- Extended Abstract —Students are able to relate these multiple concepts and generalize them in ways that were not covered in class

The assessors labeled work samples that fell into the first two categories "surface" and work that fell into the latter two categories "deep."

These findings, especially if confirmed with larger samples in the future, suggest NBPTS is identifying teachers whose students gain a solid grasp of the subjects they are taught.

A Final Note

This is just the first of several planned studies of the NBPTS certification process. The research will be continued in other certification areas and with larger study samples. Nevertheless, it is an encouraging sign that the first study produced strong evidence of the certification's validity. And it sends a clear message: When states and local school districts encourage teachers to practice at this level, children benefit.

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National Board for PROFESSIONAL TEACHING STANDARDS™

NBPTS at a Glance

Founded: 1987

Organization: Nonprofit, nonpartisan, independently governed by 63 directors (the majority of whom are classroom teachers)

Mission: Maintaining high and rigorous standards for what accomplished teachers should know and be able to do, providing a national voluntary system certifying teachers who meet these standards, and advocating related education reforms to integrate National Board Certification in American education and to capitalize on the expertise of National Board Certified Teachers

Certificate areas: 26, including generalist and subject-specific certificates for early childhood (ages 3-8) through young adult (14-18+) levels; more than 30 planned

Certification process: During the school year teacher candidates assemble a portfolio that includes, among other things, videotapes of classroom interactions and samples of student work plus the teacher's reflective commentary on the evidence. Candidates also document their education-related work outside the classroom. They demonstrate their knowledge of teaching generally, and their subject area specifically, at a one-day assessment center. Trained NBPTS evaluators who teach in the same field as the candidate judge all components of assessments.

Number of National Board Certified Teachers:
More than 16,000 in 24 certificates areas

Number seeking certification as of January 2002:
Approximately 21,000

Contact information: 1525 Wilson Boulevard, Suite 500, Arlington, VA 22209; 1-800-22-TEACH; www.nbpts.org

© Copyright 2000, National Board for Professional Teaching Standards. This project is funded in part with grants from the U.S. Department of Education and the National Science Foundation. Through September 2001, NBPTS has been appropriated federal funds of $109.3 million, representing approximately 51 percent of the National Board Certification project. More than $106.3million (49 percent) of the project's cost will be financed by non-governmental sources. The contents of this report were developed under a grant from the Department of Education. However, those contents do not necessarily represent the policy of the Department of Education, and you should not assume endorsement by the Federal government.

This report is a synthesis of findings from *The Certification System of the National Board for Professional Teaching Standards: A Construct and Consequential Validity Study.* Its authors are:
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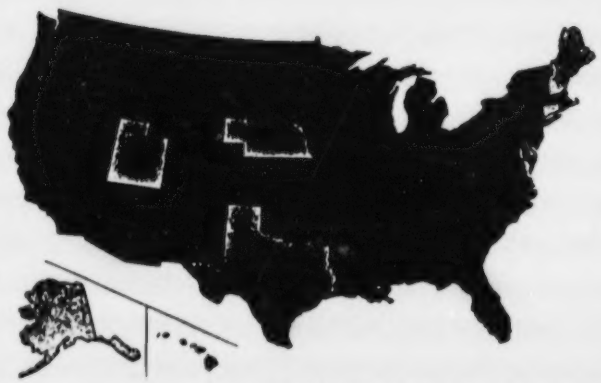
The study was published in September 2000 by the Center for Educational Research and Evaluation, University of North Carolina at Greensboro.
For copies of the full report, contact NBPTS at 1-800-22-TEACH.

States that offer incentives for teachers to pursue certification



■ Support National Board Certification with Incentives for Teachers

The vast majority of states and local districts in the U.S. support National Board Certified Teachers in a variety of ways, such as full payment or subsidies of the $2,300 certification fee, one-time grants, annual bonuses, salary increases, extended licensure, release time, professional development credits, and license portability.

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